



The year of 2006 in Poland – the year of temperature and precipitation extremes

D. Graczyk and M. Szwed

Research Centre for Agricultural and Forest Environment Polish Academy of Sciences,
Poznań, Poland darekgraczyk@wp.pl

The year of 2006 was the sixth warmest year worldwide since the records started to be made in 1850s, according to a report from the UK Met Office. Yet in Poland, it was just another warm year, being not that much different from a long-term average, but Polish climatologists, hydrologists, botanists or zoologists will remember it as a year of different extreme events.

The year 2006 started with extreme frost in Poland, e.g. for Warsaw, January was the third coldest since 1951. During the summer months, especially in July, most regions in Poland experienced heat waves. In Warsaw, July was the warmest since the time the first records were made in 1779. In many regions in Poland, the growing season saw severe drought, which caused large decline in yields. July was not only one of the warmest but also one of the driest months in the 55-year period: 1951-2006. Then there came unusually humid August (for Warsaw, the second wettest since 1951). In many places, especially in the mountain regions, local but really substantial floods took place. The last months of 2006 were also unexpectedly warm. High temperatures (too high for the early winter and for the winter) caused confusion among plants and animals. In December, spring flowers bloomed in the gardens, trees budded, mushrooms grew in the forests, and many species of animals delayed hibernation.

This study will examine different temperature and precipitation characteristics of the 2006 for 5 stations in Poland, based on observed data of temperature and precipitation. It will be among others: mean x-days temperatures, mean monthly temperatures, the number of days with temperature crossing some threshold level, maximum and minimum temperatures. Similarly, variability of precipitation will be described based on sums of monthly precipitation, number of days with a precipitation over specific

threshold level, duration of the period without a precipitation and maximum daily precipitation.

The year of 2006 will be described in the context of long-term variability for the 55-years period of 1951-2006. Its extreme character will be proved by frequency of appearance, ranks, percentage of days with specific precipitations or temperatures in a year.

The different thermal and rainy variables of 2006 will be compared with projections of these variables for the future. For comparison, the results of daily temperatures and precipitations from the Hadley Centre HadRM3-PRECIS regional model simulations (for SRES A2 and B2 scenarios in three model experiments) in the period of 2070-2100 will be used. These studies will allow to answer the question whether the extremes of 2006 can be regarded as a proxy for the future climate. Will the values presently recognized as extreme occur more frequently in the future? Will such values be normal in the future climate?